E&MJ METAL AND MINERAL MARKETS

WEEKLY MARKET INFORMATION ISSUED BY THE PUBLISHERS OF ENGINEERING AND MINING JOURNAL

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THIS WEEK IN THE MARKETS . . .

- **Lead price rose ½c a lb twice in the past week—still lower than Europe.**
- **Zinc in Europe, after transfer costs, about 1½c above U. S.**
- **No change in copper market here or in Europe—Chile may settle.**

COPPER—Domestic average 43.675c, ref'y.

Sales this week of both domestic and foreign copper were heavy. The range of prices for domestic was unchanged with the top at 50.3c delivered. People are willing to pay this much for copper for February delivery. There has been no indication of a slackening of interest here. The Chilean Government appeared to have agreed to the union demands but the workers were still out—they are asking the companies for a heavy bonus.

LEAD—16½c N. Y. (f.a.s. Gulf 15c)

Wednesday, January 4, a major smelting company put the price of lead up to 16½c N. Y. Thursday, December 29, a major producer had raised to 16c. These increases reflect the strength that has been evident in the lead market here and abroad for some time. The strength in Europe has meant that those areas which produce more lead than they consume would send a larger proportion to Europe, thus tightening the U. S. market. When the price here rose last week, Europe rose to more than match it, making a further rise here practical.

Some U. S. sellers were not sure the second rise here was wise. They feel the London market is erratic. All sales on December 29 were at the 16c price. On January 4 some sales were made at both N. Y. prices and therefore our weighted average is 16.270. The only sales at the St. Louis basis were at the new price of 16.300c. Lead sales, week ending January 4, were 13,087 tons.

ALUMINUM—Pig 22.5c per lb; ingot 24.4c

Alcan raised its price to Canadian buyers 1¼c to 22¼c per lb delivered effective Jan. 3. In the U. K. its price is now £179 per long ton, equivalent to about 22.375c per lb U. S. currency. This repeats Alcan's action of January 1 last year when it raised by ¾c for Canada. This preceded by about one week the rise of 1c here by U. S. companies. Some factors say a price rise is possible here.

ZINC—13c, East St. Louis (f.a.s. Gulf 12¾-13c)

Zinc was still priced at 13c yesterday though there were some factors who thought it might rise any day. London was so high that there was little doubt much of the zinc sent normally to the U. S. from surplus zinc producing countries could more profitably go to Europe. However some sellers here thought the London price might not be indicative of real demand in Europe; they felt it might drop down again. Also, some think auto output here may be less than in 1955. Auto spokesmen say it will be less. Last year the latter said output would be from 5½-million to 6.8-million. This year they predict the same—and may be wrong. Feeling is mixed. But it is widely held if Europe stays at the present level for a few days the price here will be raised.

QUICKSILVER—$275-$279 per flask, N. Y.

European mercury was sold this week at $275 per flask for nearby delivery, our regular quotation. This means delivery within about 10 days. There was almost no spot metal around. A largely nominal figure was quoted of about $280. Metal for delivery about a month away was quoted at from $273 to about $278.

E&MJ AVERAGE PRICES—DECEMBER 1955

Copper, domestic, refinery	43.480
Copper, export, refinery	44.665
Lead, common, New York	15.558
Lead, common, E. St. Louis	15.358
Lead, London, prompt (g)	£113.344
Lead, London, 3-months (g)	£112.638
Zinc, Prime Western, E. St. Louis	13.000
Zinc, Prime Western, delivered (h)	13.500
Zinc, London, prompt (g)	£98.438
Zinc, London, 3-months (g)	£95.694
Silver, New York, per oz.	90.450
Silver, London, per oz.	78.231
Sterling exchange, "checks"	280.260
Tin, New York, "Straits"	107.774
Tin, New York, 99% (e)	106.774
Gold, per oz., U.S. price	$35.000
Quicksilver, New York, per flask, 76-lb.	$279.423
Antimony, New York, boxed (d)	36.470
Antimony, bulk, f.o.b. Laredo	33.000
Antimony, boxed, f.o.b. Laredo	33.500
Platinum, refined, per oz.	$103.769
Cadmium (a)	170.000
Cadmium, (b)	170.000
Cadmium (c)	170.000
Cobalt, 97% grade	260.000
Aluminum, 99% grade	24.400
Magnesium, ingot	32.500
Nickel (f)	64.500
Bismuth, per lb.	$2.25

(a) Average based on producers' quotation. (b) Average of producers' and platers' quotation. (c) Average of quotation on special shapes to platers. (d) Domestic, 5 tons or more but less than carload lot, boxed. (e) Price for tin contained. (f) F.o.b. Port Colborne, includes U.S. duty. (g) Average of daily mean of bid and ask quotations, per long ton, at morning session of London Metal Exchange. (h) Delivered where freight from E. St. Louis exceeds 0.5c.

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E&MJ METAL AND MINERAL MARKETS

WEEKLY MARKET INFORMATION ISSUED BY THE PUBLISHERS OF ENGINEERING AND MINING JOURNAL

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Record 1956 Consumption of Aluminum Predicted by R. S. Reynolds, President of Reynolds Metals

"More aluminum will be used in 1956 than ever before," R. S. Reynolds, Jr., president of Reynolds Metals Company, predicted early this week. "The principal reason is the record supply, made possible by the steadily climbing output of domestic producers," he said. During 1955, they supplied an estimated 1,550,000 tons of new primary production, exceeding all expectations and setting a new record for the fourth successive year. The supply outlook for 1956 is another new high, with added facilities bringing production up to 1,650,000 short tons.

"Aluminum shipments to American industry during 1955 have been about 35% higher than in 1954 and are increasing month after month," Mr. Reynolds stated. "Every branch of the aluminum industry has reflected the growth of industrial and consumer markets. The sharpest expansion, however, has occurred in extruded, cast and foil products.

"New uses for aluminum are still being developed at a rapid rate by the aluminum industry and its customers," Mr. Reynolds declared. "The automotive industry is accelerating its consumption of aluminum, with one of the latest models using 197 lb per car, including gold-anodized aluminum grilles. In contrast, the average use of aluminum ten years ago was less than 10 lb per car."

In the electrical field, Mr. Reynolds pointed to his company's development of a new type of aluminum strip which is self-insulating as a result of special anodized treatment. "Drastic reductions in the cost and weight of electrical equipment are expected to result from the adoption of this newly designed aluminum material for transformers and other electrical equipment instead of the conventionally insulated wire ordinarily used."

"These new uses are illustrative of what is happening in all of the major aluminum markets, including construction, appliances and packaging," Mr. Reynolds emphasized. "The confidence in the continued growth of aluminum markets is reflected in the entirely new cycle of expansion which is getting under way. The construction of extensions to existing Reynolds Metals plants is progressing rapidly. A new Ohio River Valley plant, to be started early in 1956, will bring the company's total capacity to 550,000 tons. Announced expansion plans of all present and prospective producers will add a total of 700,000 tons of new capacity within the next few years, a 46% increase over the total 1955 capacity.

"This new expansion," Mr. Reynolds said, "is remarkable for many reasons:
1. The expansion program begun during the Korean War was completed only a few months ago, more than doubling the nation's annual primary production since 1950.
2. This expansion has been undertaken even though plant construction costs have continued to rise, far more than aluminum prices have.
3. This expansion is based entirely on the bright prospects for future peacetime markets. Although the added capacity improves the nation's mobilization position, it is not based on any military emergency orders or requirements.
4. All of the existing producers are depending entirely on private financing for their capital requirements, without the benefit of rapid tax amortization or Government guarantees.

"With the continued rapid growth of aluminum markets and in view of the industry's prompt and steady expansion of its supply," Mr. Reynolds concluded, "the outlook for 1956 is brighter than ever before."

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Chromium in September 1955

Consumption of chromite during September 1955 reached a new high exceeding the previous peak in August 1953 by 14%, according to the Bureau of Mines. Chromium consumption statistics in September compared with the preceding month, follow:

	% gain	Consumption % of total chrome
Metallurgical	15	82
Refractory	32	9
Chemical	0	9

Production of chromium alloys gained 4% over August and totaled 35,033 short tons; the chromium content averaged 61.7%. Stocks held by producers on September 30 totaled 35,335 short tons. Production of chromium chemicals totaled 9,939 short tons, in terms of sodium bichromate equivalent.

Statistics of chromite (chrome ores) in 1951-54, and first 9 months of 1955, in thousands of short tons, follow:

	Domestic production (shipments)	Imports	Total new supply	Consumption
1951	7.1	1,429	1,436	1,212
1952	21.3	1,709	1,730	1,185
1953	58.8	2,227	2,285	1,336
1954	163.4(a)	1,470	1,633	914
1955: 1st qtr.	35.0	350	385	343
2nd qtr.	37.0	453	490	385
July	13.3	153	166	(b)117
Aug.	17.6	150	168	(b)126
Sept.	17.9	195	213	149
3rd qtr.	48.8	498	547	392
Total 9 mo.	120.8	1,302	1,422	1,119

(a) The production total of 163,365 for the year 1954 will be compared with the Bureau of the Census total for this commodity when it is available. Differences in the total will be adjusted or explained. (b) Revised.

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Rated Steel Capacity for 1956 Up 2,534,780 Tons from 1955

For the ninth year in succession, steel companies have increased the annual steelmaking capacity of the U. S. — to a new, record high total of 128,363,090 net tons as of January 1, 1956, according to Benjamin F. Fairless, president, American Iron and Steel Institute.

Mr. Fairless reported that the steel companies' large scale expansion and improvement programs brought about a capacity net gain of 2,534,780 tons as compared to the total announced one year ago. The capacity on January 1, 1955 was 125,828,310 net tons of ingots and steel for castings annually.

With that increase, the steel companies have raised the capacity of the world's largest steel industry nearly 36.5-million tons or close to 40% in the post World War II era, according to Mr. Fairless. The expansion programs are continuing, he pointed out.

The new weekly steel capacity figure, on which the steel industry's weekly operating rate will be figured starting with the first announcement January 3, is 2,461,893 net tons of ingots and steel for castings, compared with 2,413,278 tons at the start of 1955.

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Miscellaneous Metals

Quotations cover wholesale lots, f.o.b. New York, unless otherwise specified.

ALUMINUM — Per lb., base price, f.o.b. shipping point, (freight allowed): 30 lb. ingot, 99% plus, 24.4c.; in pigs, 22.5c.

Base prices on aluminum ingot of higher purity: 99.75%, 24.9c.; 99.8%, 25.4c.; 99.85%, 26.4c.

ANTIMONY — Cents per lb., 99½% grade:

	Domestic Boxed (a) New York	Domestic Bulk (b) Laredo
Dec. 29	36.470	33.000
Dec. 30	36.470	33.000
Dec. 31	36.470	33.000
Jan. 2	—holiday—	
Jan. 3	36.470	33.000
Jan. 4	36.470	33.000

(a) Boxed (224 lb.) 10,000 lb. or more but less than carload. (b) In bulk, carload, f.o.b. Laredo; boxed one-half cent extra.

BISMUTH — Per lb., in ton lots, $2.25.

CADMIUM — Per lb., delivered.

	Commercial (a) Sticks	Special (b) Shapes
Dec. 29	$1.70	$1.70
Dec. 30	1.70	1.70
Dec. 31	1.70	1.70
Jan. 2	—holiday—	
Jan. 3	1.70	1.70
Jan. 4	1.70	1.70

(a) Base price. (b) Special shapes to platers.

CALCIUM—Per lb., in ton lots, cast in slabs and small pieces, $2.05.

CHROMIUM — Per lb., 97% grade, 0.5% C, $1.25; 9-11% C, $1.34. (Usually sold as chrome-metal.)

Electrolytic chromium, commercial grade, 99% min., f.o.b. Niagara Falls, N. Y., per lb.: $1.25.

COBALT—Per lb., rondelles or granules, in 500 to 600 lb. containers, $2.60; in 100 lb. containers, $2.62; less than 100 lb. containers, $2.67. Prices ex. docks or store N. Y. or Niagara Falls.

Cobalt fines, $2.60 per lb. of Co contained, f.o.b. N. Y. or Niagara Falls, standard package of 650 lb.

COLUMBIUM — No quotation.

GALLIUM — Per gram, in 1,000 gram lots, $3; 1 to 999 grams, $3.25.

GERMANIUM — Per lb., $295.

INDIUM — Per oz. troy, 99.9%, $2.25.

IRIDIUM — Per oz. troy, $100@$110.

LITHIUM — Per lb. 98%, $11@$14.

MAGNESIUM — Per lb., 10,000 lb. lots: Pig ingot 99.8%, Freeport, Tex., 32.5c; Port Newark, N. J. 33.9c; Madison, Ill., 33.7c; Notched ingot, Freeport, 33.25c; Port Newark 34.7c; Madison, 34.5. Effective Aug. 16, 1955.

MANGANESE—Per lb., delivered, 95.5% Mn, 2 in. x down, carloads, bulk, 45c.; packed, 46¼c.

Electrolytic, per lb., f.o.b. Knoxville, Tenn., with freight allowed east of Mississippi; Min. 99.9% Mn.; Carload 30c.; ton lots, 32c. Premium for hydrogen-removed metal 0.75c, per pound.

MOLYBDENUM — Per lb., powdered carbon reduced fob Washington, Pa., $3.20.

NICKEL — Per lb., electrolytic cathodes, f.o.b. Port Colborne, Ont., contract price, 64½c, U.S. import duty included. Nickel oxide sinter, 60¾c per lb. of nickel content, f.o.b. Copper Cliff.

OSMIUM — Per oz., $80@$100, nominal.

PALLADIUM — Per oz troy, $23@$24.

PLATINUM—Per oz troy $97@$117. Our appraisal of average, $104.

QUICKSILVER — Per flask of 76 lb. $275-$279.

RADIUM — Per mg. radium content, $16@$21.50, as to quantity.

RHODIUM — Per oz. troy, $118@$125.

RUTHENIUM — Per oz. troy, $45@$55.

SELENIUM—Producers quote $9@$10 per lb; distributors $10.50.

SILICON — Per lb., minimum, 97 percent Si, maximum 1 percent Fe, crushed, carload lots, in bulk, 20½c.

SODIUM — Per lb., carload lots, in drums, 16½c.; less than carload lots, 17c.

TANTALUM — Per kilo, base price, $137 for rod; sheet, $93.

TELLURIUM — Per lb., $1.75.

THALLIUM — Per lb., $12.50.

TITANIUM — Per lb., Grade A-1, 99.3% plus, maximum 0.3% iron, $3.45 f.o.b. shipping center. (On maximum .5% iron, $3.15.) Effective Nov. 23.

TUNGSTEN — Per lb., 98.8% minimum 1,000 lb lots, $4.30, effective Dec. 1. Hydrogen reduced, 99.9% plus, $5.

VANADIUM — Per lb, 100-lb lots, $3.45.

ZIRCONIUM — Per lb., sponge, $10.

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Metallic Ores

Prices in tons of 2,000 lbs., or "units" of 20 lb., unless otherwise stated.

ANTIMONY ORE—Per unit of antimony contained, 50 to 55%, $3.20@$3.35; min. 60% $3.90@$4.00; min. 65% $4.05@$4.25.

BERYLLIUM ORE — Per unit BeO contained, 10-12% f.o.b. mine, Colorado, $46@$48, depending on quantity.

Imported ore, per short ton unit of BeO, c.i.f. U.S. ports, basis 10% to 12% BeO, $36@$38.

CHROME ORE—Per long ton, dry basis, subject to penalties if guarantees are not met, f.o.b. cars N. Y., Phila., Balt., etc.

Rhodesian:
48% Cr_2O_3, 3 to 1 ratio lump (b) $45.00@$46.00
48% Cr_2O_3, 2.8 to 1 ratio.. (b) $42.00@$43.00
48% Cr_2O_3, no ratio..... (b) $33.00@$35.00

South African (Transvaal):
48% Cr_2O_3, no ratio..... $31.00@$32.00
44% Cr_2O_3, no ratio..... $23.50@$24.50

Turkish (basis 48% 3 to 1):
48% Cr_2O_3, 3 to 1 ratio, lump and concentrates ..... $52@$53
46% Cr_2O_3, 3 to 1 ratio, lump and concentrates ..... $49.50@$51.
Pakistan (Baluchistan):
48% Cr_2O_3, 3 to 1 ratio ..... (a) $49@$50
(a) Nominal. (b) Long term contracts.

COBALT ORE — Per lb of cobalt contained, f.o.b. Cobalt, Ont., 9% grade, $1.30; 10%, $1.40; 11%, $1.50; 12%, $1.60.

COLUMBITE — Per lb of pentoxide, $1.35@$1.65, basis 50% Cb_2O_5. Nominal.

IRON ORE — Per long ton, Lower Lake ports. Lake Superior ore:

Mesabi non-bessemer, 51½% iron, $10.10. Old Range, non-bessemer, $10.25.

Mesabi, bessemer, 51½% iron, $10.25. Old Range, bessemer, $10.40.

Eastern ores, cents per long ton unit, delivered at furnaces: Foundry and basic, 56@62%, 17@18c.

Swedish, 60@68% (contracts), per unit, 22c plus, depending on grade, c.i.f. Atlantic ports.

Brazilian, per gross ton, 68.5% iron, f.o.b. port of shipment: Contracts $11.50@$12.00; nearby business $12.25@$12.50.

MANGANESE ORE—Consumption continues at high level, and business has picked up slightly. Freight rate increases and strengthening demand have pushed up the price to consumers.

Indian ore was quotable at $1.12@$1.17 per long ton unit of Mn, c.i.f. U. S. ports, duty extra, basis 46 to 48% Mn, nearby positions.

On long-term contracts for ore from various sources, 46@48% Mn, quotations nominal at 94@96c, c.i.f. U.S. ports, duty extra.

Low iron, 48% Mn (max. 2% Fe), $1.12 per long ton unit of Mn, duty extra.

Chemical grade, per ton, coarse or fine, minimum 84% MnO_2, carloads, in drums $96; burlap bags $90.50 f.o.b. Philadelphia.

MOLYBDENUM ORE — 90-95% MoS_2 concentrate. Per lb of contained Mo, f.o.b. Climax, Colo., $1.10 plus cost of containers; f.o.b. Washington, Pa., $1.15.

TITANIUM ORE—Per gross ton, ilmenite, 59.5% TiO_2, f.o.b. Atlantic seaboard, $20, nominal.

Rutile, per lb, minimum 94% concentrate, 10@15c, depending on time of delivery.

TUNGSTEN ORE — Per short ton unit of WO_3, concentrates of known good analysis, basis 65%:

Foreign ore, per short ton unit of WO_3, nearby arrival, c.i.f. U.S. ports, duty extra: Wolfram, $33.50@$34.00; scheelite $34.00@$34.50, depending on grade.

Western high grade scheelite concentrate, $63 per unit, f.o.b. mine.

North Carolina high grade concentrate, $63 per unit, f.o.b. mine.

London, per long ton unit of WO_3, buying prices, good ore: Wolfram 270s bid, 274s asked.

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VANADIUM ORE — Per lb V_2O_5 contained, domestic, 31c, f.o.b. mine.

ZIRCON ORE (sand) — Per long ton, c.i.f. Atlantic seaboard, minimum 65% ZrO_2, $48@$49.

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Metallic Compounds

ANTIMONY TRIOXIDE — Per lb, carload lots, in bags, 29c; less than carload, 30½c.

ARSENIOUS OXIDE (arsenic trioxide), refined, white min. 99%, per lb, 5½c, in barrels carload lots delivered.

COBALT OXIDE — Ceramic grade 72½ to 73½% Co, $1.96 per lb east of Mississippi and $1.98½ per lb west of Mississippi. Quotations are for oxide packed in 350-lb containers.

COPPER SULPHATE — Per lb, in carload lots, 14.9c, large or small crystals, f.o.b. N.Y.

GERMANIUM OXIDE — Per lb, $142.

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Rolled Metals, Etc.

BRASS — Cents per lb (base prices)

	Sheet	Wire	Rods
Yellow Brass	52.27	52.81	(a) 42.41
Best quality brass ..	54.29	54.83	54.23
Red brass 80%	56.55	57.09	56.49
Red brass 85%	58.09	58.63	58.09
Com'l bronze 9%	60.18	60.72	60.12
Gilding metal	61.74	62.28	61.68

(a) Free cutting

CADMIUM — Per lb Special shapes, to platers, $1.70.

COPPER — Per lb Sheets, over 20 in. wide, 62.76c, rolls 20 in. and under, 60.79c; Wire, bare, carload lots f.o.b. mills 48.35c.

LEAD SHEETS — Per lb, full rolled, 140 sq ft, 21½c, effective Dec. 29.

MONEL METAL — Per lb (base prices) Standard cold-rolled sheet, 78c; cold-rolled strip, 87c. Rods, hot-rolled 69c.

NICKEL — Per lb (base prices) sheets, cold-rolled, $1.02; rods, hot-rolled, 87c.

NICKEL SILVER — Per lb, sheets, 10% 66c; 18% 69.63c; wire and rods, 10% 68.33c.

PHOSPHOR BRONZE — Per lb, sheets, 5% tin, 80.99c; wire and rods, 5% 81.49c; 10% 87.53c.

ZINC — Per lb, carload lots f.o.b. mill (base price): Sheet 23c; ribbon 20½c; plates 19½@22¼c, depending on size.

ZINC DIE-CASTING ALLOY — Ingot per lb, carload lots, delivered, 17½@18½c.

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United States Gold Price

The price paid by the United States Treasury for gold purchased by the mints continued at $35 per troy ounce of fine gold, less ¼ of 1%.

Actual payment by the United States Treasury for gold in imported and domestic ore or concentrate is at 99.75% of the price quoted by the Treasury, which at present is equal to $34.9125 per oz.

Tungsten
Tin
Antimony

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September Iron Ore Shipments Exceed Domestic Production

According to the Bureau of Mines, production of iron ore in September dropped 2% below August, but was 55% above September 1954. Shipments were in excess of production, but down 4% from August. Total output for month was 13,830,070 gross tons with shipments reaching 14,544,228 tons. Mine stocks dropped to 6,129,850 tons.

Lake Superior region reduced September production to 11,811,917 tons, while shipments dropped 6% below August figure to 12,540,840 tons.

Southeastern region increased production 67% and shipments 82% over August totals. Production was 833,837 tons and shipments were 842,249 tons. Northeastern states produced 478,749 tons and shipped 492,627.

Western mines produced 636,745 tons and shipped 599,612, a decrease of 12% and 18% respectively from August data. By-product ore from pyrite roasting was 68,822 tons and 68,900 tons shipped.

Imports totaled 2,517,436 tons in September, 12% below August; but 34% above September 1954. Exports totaled 659,075 tons, of which 645,318 went to Canada and 12,714 went to Japan.

September Production 1955
(Excluding 5% plus Mn ore) (gross tons)

	Steel furnace ore	Other ore	Totals
Lake Superior	627,090	11,184,827	11,811,917
Southeastern	...	833,837	833,837
Northeastern	99,033	379,716	478,749
Western	51,209	585,536	636,745
Byproduct	...	68,822	68,822
Total	777,332	13,052,738	13,830,070

September Shipments 1955
(Excluding 5% plus Mn ore)
(thousands of gross tons)

Lake Superior	Steel furnace ore	Other ore	Totals	Stocks
Lake Superior	667.7	11,873.1	12,540.8	5,099.6
Southeastern	....	892.2	842.3	123.9
Northeastern	106.6	386.1	492.6	348.5
Western	51.6	541.0	599.6	518.5
Byproduct	....	68.9	68.9	39.4
Total	825.9	13,761.3	14,544.2	6,129.9

Iron Ore Statistics in U. S.
January-September 1955
(Excluding 5% plus Mn ore) (gross tons)

	Production	Shipments
Lake Superior	65,586,868	66,274,887
Southeastern	5,486,271	5,429,757
Northeastern	7,951,914	4,050,673
Western	5,776,758	5,695,298
Total	81,360,103	82,015,338

U. S. Imports (other than
10% plus Mn ore) (gross tons)

	September	To date 1955
Algeria	9,680	9,680
Brazil	118,621	776,790
British W. Africa	9,900	89,499
Canada	1,531,956	7,002,072
Chile	100,228	806,277
Cuba	7,141	27,455
Dominican Republic	...	76,744
Liberia	83,751	666,036
Peru	84,466	1,129,808
Mexico	16,516	138,972
Sweden	125,766	860,166
U. K.	36	2,012
Venezuela	429,375	5,312,730
Total	2,517,436	16,898,241

LOOKING AHEAD IN THE MARKETS

(A regular feature appearing once each month)

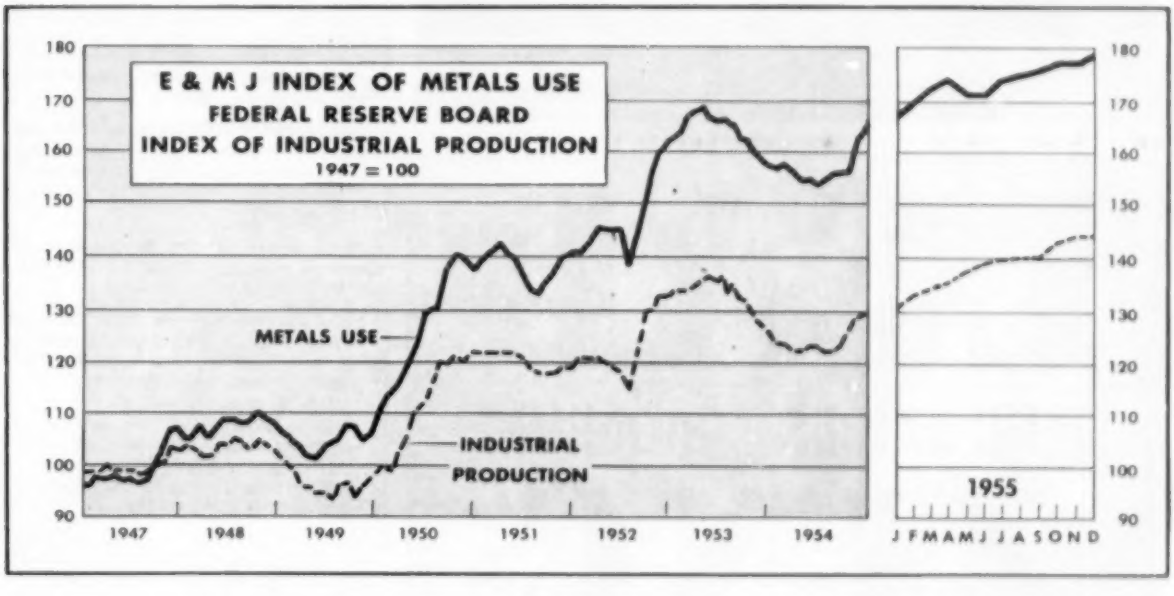
STRENGTH IN THE METAL MARKETS, discussed here last month, has showed up in higher lead, tin and copper prices. The strength of final consumer demand, which shows no sign of declining, is pushing the markets up from the bottom. The monetary authorities have the weapons to stem a rapid inflationary movement if it should get under way, but there is strong belief they will be reluctant to do so. There have been some indications the Federal Reserve Board is aware of Treasury needs as well as the country's general monetary situation.

COPPER PRICES, as usual, fooled many people. They had been expecting copper to weaken as the year end approached; instead it has strengthened. In the last few days of the month foreign copper was reported to us at close to 52½c. By the middle of the month some domestic copper was being sold at 50.3c delivered. Resale copper is being sold at even higher prices, in small quantities. Some people say that with the year-end struggle to take care of Lifo problems at an end for all but a few firms whose tax year does not end in December, the pressure will let up. But others point out that some consumers have been offering 47c and even 48c for copper to be delivered in the second and perhaps third quarter. Many fabricators have resolved, after being caught with low inventories two year ends running, to attempt to keep them up all year. With the Chile strike facing them they feel less optimistic than ever.

ALUMINUM is in a very strong position. Alcan is cutting back output by 65,000 tons the first twelve weeks of 1956 owing to a power shortage. Secondary metal is much higher than primary. Primary aluminum pig went up 1c last January and again in August. It could go up again – certainly the demand situation would permit it.

LEAD went up ½c Dec. 29. It had been lower than places outside the U. S. and the rise would have put the price here in "proper" relation to the rest of the world. But the price elsewhere immediately rose by about ½c too. If this continues it could rise here again in a month or so.

ZINC is strong enough to rise from its present 13c. By the time we go to press it may be up. When an attempt to put it up Oct. 17 failed, prices outside the U. S. were about 1c lower than they now are. There is some sentiment to hold at the present price owing to the concern with substitutes.

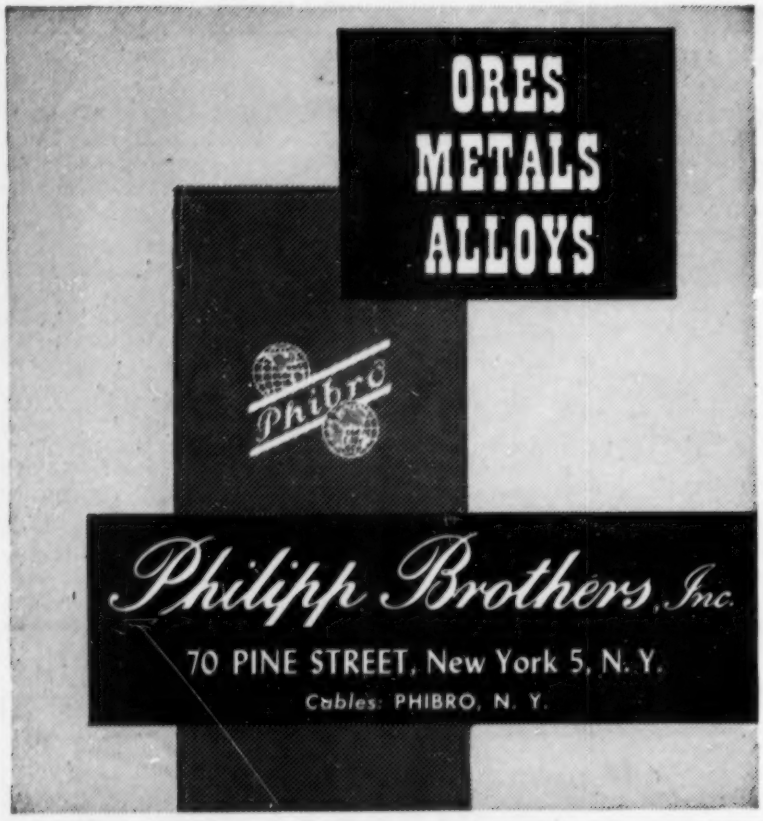


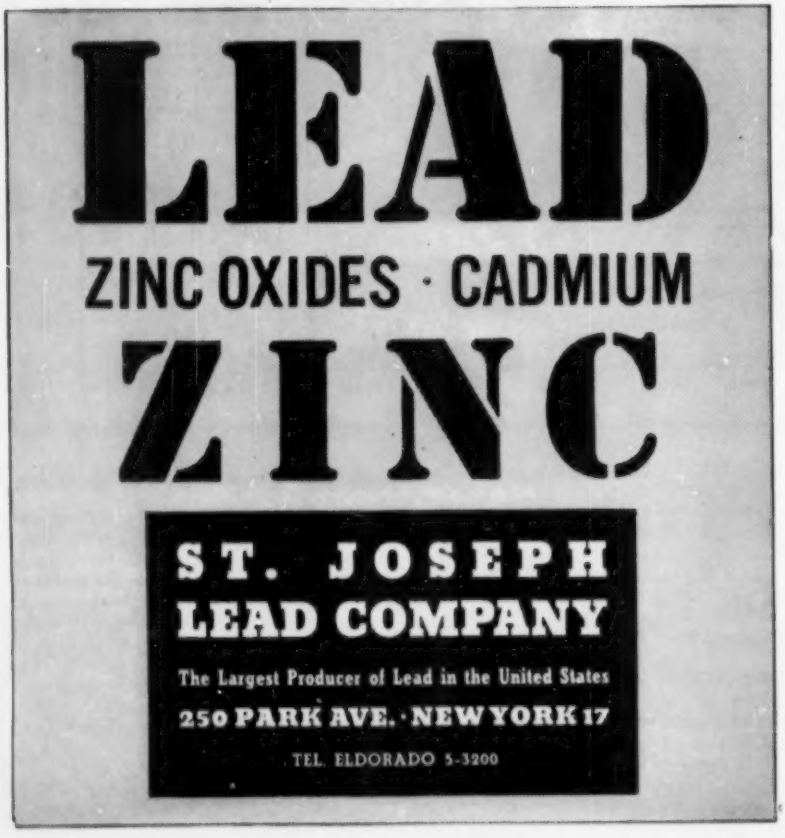
The year 1955 ended with the U. S. economy operating at the highest level it has ever reached. The *E&MJ* estimate of metals consumption by U. S. industry in December is 179% of the 1947 average. This is a seasonally adjusted figure and takes in account the seasonal decline in steel production during the holidays. In general, metal working industries have been going almost full blast and to a considerable extent it is the limitation in materials, especially metals, that has prevented the economy from functioning at even higher levels.

The Federal Reserve Board's index of industrial production in November, when adjusted for seasonal variation, was 144% of the 1947-49 average. There were prospects it would be 145% in December though most economists seem to feel it will remain at 144%.

Steel production during 1955 was about 117-million tons, by far the highest on record. The steel industry was so convinced of continuance of the great demand for steel that it has been making concrete plans for expansion. Even though there are some predictions of a drop in auto output in 1956 there is little doubt it will be high – most suggest about 7-million in contrast to the 1955 figure of about 8-million. But the auto industry at the beginning of 1955 expected a production and sales figure of only about 6-million – they could be wrong again.

The strong demand throughout the economy is indicative of the high income of the consumer and his willingness to spend it, as well as his access to credit. It appears he has confidence in the strength of the economy and is not overly worried about the need to save for a recession or depression, or for retirement. This strong consumer demand appears to be finally hitting the materials markets and many now expect to see prices move up rapidly. This might possibly bring on restrictive monetary policy to prevent a run-away inflation.





Ferroalloys

(on contract, eff. 1 Jan. 1956)

FERROCHROMIUM — per lb contained Cr; carload lots, lump, bulk; fob dest. cont. USA—

High Carbon (4-9% C, 65-70% Cr) 26.25c

Low Carbon (0.60% C, 67-72% Cr) 36.50c

Special (0.01% C, 63-66% Cr) 32.75c.

FERROCOLUMBIUM—per lb contained Cb; ton lots, lump (2 in.), packed; fob dest. cont. USA—

(50-60% Cb, max 0.40% C, max 8% Si) $6.90

FERROMANGANESE: Standard — per lb; carload lots, lump, bulk; fob shipg pt—

(74-76% Mn) 10.25c

Medium Carbon—per lb contained Mn; carload lots, lump, bulk; fob dest. cont. USA—

(80-85% Mn, 1¼-1½% C) 22.35c

Low Carbon—basis as for Med. Carbon—

(85-90% Mn, max 0.07% C) 30.95c

FERROMOLYBDENUM — per lb contained Mo; 5,000 or more lb lots; fob shipg pt—

(58-64% Mo) powdered, packed $1.66

Other sizes, packed $1.54

Calcium Molybate (Ca0 Mo03) lump, packed $1.34

Technical Molybdic Trioxide (Mo03) lump, bagged $1.30; lump, canned $1.31; briquets packed $1.33

FERROPHOSPHORUS—per gross ton; carload lots, lump, bulk (max 6 in.); fob shipg pt (equivalent to Tenn.)—

(23-26% P) $100 plus $4 per 1% above or below 24%

FERROSILICON—per lb contained Si; carload lots, lump, bulk; fob shipg pt—

(50% Si) 12.75c

FERROTITANIUM: Low Carbon — per lb contained Ti; ton or more lots, lump (½ in. +), packed; fob dest. NE USA—

(40% Ti, max 0.10% C) $1.35

(25% Ti, max 0.10% C) $1.50

Medium Carbon—per net ton; carload lots, lump, packed; fob dest. NE USA—

(17-21% Ti, 3-5% C) $225

High Carbon—basis as for Med. Carbon—

(15-19% Ti, 6-8% C) $200

FERROTUNGSTEN — per lb contained W; 5,000 or more lb lots, lump (¼ in.), packed; fob dest. cont. USA—

(70-80% W) $3.30

FERROVANADIUM — per lb contained V; carload lots, var. sizes, packed; fob dest. cont. USA—

(50-55% V) Open Hearth $3.10, Crucible $3.20, High Speed $3.30.

SILICOMANGANESE—per lb; carload lots, lump, bulk; fob shipg pt

(1.5% C max, 18-20% Si) 11.50c

(2% C max, 15-17½% Si) 11.30c

(3% C max, 12-14½% Si) 11.10c

SPIEGELEISEN—per gross ton; carload lots, lump, bulk; fob Palmerton Pa.—

3% max Si, 16-19% Mn $89.50

3% max Si, 19-21% Mn $91.50

3% max Si, 21-23% Mn $94.00

E&MJ QUOTATIONS

Daily Prices of Metals

Dec.-Jan.	ELECTROLYTIC COPPER Domestic Refinery	Export Refinery	LEAD New York	St. Louis	ZINC Delivered (b)	East St. Louis	ALUMINUM Primary Pig 99%	TIN Straits New York	99% (a) New York
29	44.300	46.700	16.000	15.800	13.500	13.000	22.500	107.750	106.750
30	42.975	46.075	16.000	15.800	13.500	13.000	22.500	108.000	107.000
31	No Market	46.075	16.000	15.800	13.500	13.000	22.500	108.000	107.000
2					Holiday				
3	43.850	44.075	16.000	15.800	13.500	13.000	22.500	108.875	107.875
4	43.575	44.925	16.270	16.300	13.500	13.000	22.500	108.500	107.500
Averages	43.675	45.570	16.054	15.900	13.500	13.000	22.500	108.225	107.225
Calendar Wk. Avgs.									
Dec. 26-31	43.181	45.250	15.800	15.600	13.500	13.000	22.500	108.000	107.000

(a) Nominal Quotation for tin content.

(b) Prime Western Zinc sold on delivered basis at centers where freight from East St. Louis exceeds one-half cent a pound.

The above quotations are our appraisal of the major United States markets, based on sales reported by producers and their agencies. They represent payments received by producers for the product. They are reduced to the basis of cash, New York or St. Louis, as noted. Prices in cents per pound.

Copper, lead and zinc quotations are based on sales for both prompt and future deliveries; tin quotations are for prompt delivery only.

COPPER prices, domestic, in the trade are quoted on a delivered basis, that is, delivered at consumer's plants. As delivery charges vary with the destination, the figures shown above are net prices at refineries on the Atlantic seaboard. Delivered prices in New England average 0.300c per pound above refinery basis.

COPPER quotations, foreign or export, reflect prices obtaining in the open market and are based on sales in the foreign market reduced to the f.o.b. refinery equivalent, Atlantic seaboard. On f.a.s. transactions we deduct 0.075c. for lighterage, etc., to arrive at the f.o.b. refinery quotation.

COPPER quotations are for ordinary forms of wirebars and ingot bars. The premiums on special shapes, effective in some instances on deliveries beginning Sept. 1, 1955, are: Standard ingots 0.25c per pound; slabs 0.55c and up, cakes 0.6c and up, depending on weight and dimensions; billets 1.725c and up, depending on dimensions and quality. Discount on cathodes 0.125c to 0.15c per pound.

ZINC quotations reflect sales of the Prime Western grade as well as sales of other grades when sold on a Prime Western basis. Premiums obtaining over Prime Western zinc in the East St. Louis market on the following grades, in cents per pound: Selected 0.10c; Brass Special 0.25c; Intermediate 0.5c. High Grade zinc sold on contract, delivered to the consumers' plants, commands a premium of 1.35c per pound over the East St. Louis basis for Prime Western; on Special High Grade the premium or differential is 1.75c per pound, effective Dec. 1, 1955.

LEAD quotations are for the common grade, and are based on sales of domestically refined metal sold to domestic consumers. The differential on sales in the Chicago district is 15 points under New York; for California 20 points under New York; for New England add 7½ points to the New York basis. Corroding grade commands a premium over common lead of 10 points.

ALUMINUM quotations refer to primary pig, 99%, delivered to consumers. The U.S. primary producers as well as the major exporter of primary aluminum to the U. S., quote prices delivered to consumers in the U. S. The weights are estimated on the basis of daily average primary capacity in those cases where daily sales or shipments are not available. Ingot sales by primary producers, reduced to the pig price, are included in calculating the quotation. The premium on standard ingots, 99+% is 1.9c per lb.

Note: The daily quotations for copper, lead and zinc are weighted averages of sales reported to E&MJ; weekly averages are arithmetical averages of the daily quotations; monthly averages are the arithmetical averages of the daily quotations.

Silver, Gold, and Sterling Exchange

Dec.-Jan.	Sterling Exchange	Silver N.Y.	Silver London	London Gold (a)
29	280.2321	90.500	78.500d.	249s. 5¼d.
30	280.2500	90.500	78.500d.	249s. 6½d.
31		Not Quoted		
2	Holiday	Holiday	78.750d.	249s. 5¾d.
3	280.3616	90.500	78.750d.	249s. 5d.
4	280.4062	90.500	78.750d.	249s. 6d.
Av.	280.312	90.500		
Calendar Wk. Avgs.				
Dec. 26-31		90.500		

(a) Open market

The daily silver quotation reported by Handy & Harman, in cents and fractions of a cent per troy ounce, is the price paid by Handy & Harman in settlement for silver contained in unrefined silverbearing materials submitted to them for refining. It is determined on the basis of offers of bar silver .999 fine as made to Handy & Harman for nearby delivery at New York by regular suppliers in quantities sufficient to meet daily requirements, and it is usually one quarter cent below the price at which such offers are made.

The Treasury's purchase price of newly mined domestic silver was established at 90.5c per troy ounce, 1000 fine, effective on July 1, 1946 under an amendment to the Silver Purchase Act of July 6, 1939.

London silver quotations are in pence per troy ounce, basis .999 fine.

London gold quotations are per troy ounce, basis 1000 fine.

Sterling, in cents, N. Y. Federal Reserve Bank average of noon buying rates.

London Metal Exchange

Dec.-Jan.	COPPER Cash Bid	Cash Asked	3 Mo. Bid	3 Mo. Asked	LEAD Current Month Bid	Current Month Asked	3 Mo. Bid	3 Mo. Asked	ZINC Current Month Bid	Current Month Asked	3 Mo. Bid	3 Mo. Asked	TIN Cash Bid	Cash Asked	3 Mo. Bid	3 Mo. Asked
29	396	396½	390	391	116¾	117	116	116¼	99¾	100	97	97¼	830	831	809½	810
30	399½	400	393½	394	120	120½	118¼	118½	101	101½	98¼	98¾	831½	832	812½	813
2	396	398	389	390	120	120½	118½	119	101½	101¾	98¾	99	832½	833	814	815
3	398	399	390½	391½	122	122¼	119¼	120	103	103½	100	100¼	848	850	821	822
4	394½	395	386½	387	126¼	126½	123¼	123½	105	105¼	101¾	102	844	845	820	821

Prices are for the official a.m. session in pounds sterling per ton of 2240 lb. Copper basis wire bars, lead 99.97%, zinc 98% and tin min. 99.75%.
Correction: LME tin Cash Bid, Dec. 6 should have been 810 not 812.

THIS WEEK'S BUSINESS INDICATORS

	Latest Week	Preceding Week	Month Ago	Year Ago	Net Change Year Ago
Steel Rate (% of capacity in operation)	95.0	(a) 96.9	97.6	77.6	+17.4
Steel Ingot Production, thousands of tons	2,292	(a) 2,338	2,356	1,850	+442
Automobile Production (cars and trucks)	121,632	(a) 177,250	213,506	148,436	–26,804
Electric Power Output (millions kwh.)	11,614	11,602	10,727	9,431	+2,183
Engr'g Const. Awards, 4-week daily av., in thousands (c)	$56,563	$61,489	$57,231	$56,555	+$8
Federal Reserve Index of Industrial Production (e)	(d) 144 Dec.	.....	144	130	+14
E&MJ Index of Nonferrous Metal Prices (b)	(d) 236.96 Dec.	.....	234.51	187.45	+49.51
All Commodities, Bureau of Labor Statistics (e)	(d) 111.2 Dec.	.....	111.2	109.5	+1.7

(a) Revised. (b) 100 is composite of 1922-3-4. (c) From Eng. News-Record. (d) Preliminary. (e) Base period 1947-49

Copper & Brass Association Says 1955 a Trying Year For Copper — Expects Expanded Supplies in 1956

The past year was a trying one for the copper industry. At a time when the business world was experiencing the most prosperous industrial period in history, about 150-thousand tons of refined copper were lost to metals users because of industry strikes among domestic primary copper producers, as well as in Chile and Africa.

The resultant loss in production combined with record demand to cause a world-wide tight copper market.

The Department of Commerce, arranged for a diversion of copper, intended for defense stockpiling, to consumers. During the twelve month period October 1954 – September 1955, some 85,000 tons of copper were made available. However, the unprecedented world demand for copper at a time when domestic prices remained at low levels caused a flow of copper away from the U. S. Even the reduction of LIFO inventories by fabricators to take care of customer requirements was not sufficient to meet the record demand for copper.

Events of the past year dramatized two aspects of copper supplies:

1. While most primary producers would prefer to market copper at price levels reflecting the joint best interests of copper producers and users, they cannot but be subject to the vagaries of labor and political conditions in the respective producing countries.
2. The United States cannot depend entirely on its own resources for copper supplies, and the copper industry cannot isolate itself from important happenings elsewhere in the world.

As a result, conditions which were detrimental to the continued growth of copper consumption were encouraged by events of 1955. However, as 1956 gets under way, constructive changes are in prospect. A more favorable outlook for expanded production is foreseen, and it is hoped there will be greater freedom from disturbances that have created obstacles to the free and efficient flow of copper during last year.

World Conditions Govern Copper

Copper is subject to the laws of supply and demand in the international market. It is therefore subject to the many factors that affect world trade: currency convertibility between countries, Government stockpiling, foreign exchange controls, trade agreements and import-export licensing as well as normal producer-user-contractual agreements.

Not the least important factor to be considered is the occurrence of labor disturbances within the three major copper mining countries – the United States, Rhodesia and Chile. For example the supply of copper would have balanced demand in 1955 except for production disturbances caused by strikes in all three countries, which caused an imbalance. The immediate effect was to cause instability between supply and demand in major world markets.

As increases in production come on to the market during the next three years, it is expected the effect of strikes will be lessened. New production will contribute to a more orderly relationship between supply and demand.

The United States is the world's largest producer of copper. The most recent figures available (1954) indicate that of total Free World production of approximately 2½-million tons, 45% was mined in North America, 27% in Africa, 16% in Central and South America, 4.5% in Europe, 6% in Asia, and 1.5% in Australia. Total North American mine production was over 1-million tons.

Estimates of primary copper consumption per capita indicate that U. S. consumption at the present time is around 15 lb per capita. This compares with a world-wide figure of 2.8 lb (including the U. S.) and 1.8 lb per capita (excluding the United States). It is expected that as underdeveloped countries become more technically advanced their per capita consumption will rise.

Completion of some major post-war mining projects has already added substantially to production capacity. Analysis indicates increasing capacities in the United States, Canada, Africa and Chile, which could produce by 1958 well over 400,000 tons more copper than the theoretical capactiy in 1955. The net effect would be over 200,000 tons added to world production in 1956, more than 100,000 tons in 1957, and more than 100,000 tons in 1958.

General industry expectations are that a rough balance between supply and demand will take place some time during 1956, provided there are no major strikes in the copper mining industry to disrupt production. If production is unimpaired, output of refined copper for 1956 will reach a new record for the Free World – estimated at about 3-million tons. This compares with production of 1955 estimated at 2,700,000 tons, which is a record up to this time.

Shortcomings of Substitutes

Owing to the continued high demand for copper since the electrical and engineering industries began to consume the metal on a commercial basis, and because of the long term demand for durable goods in the United States and abroad, some of the traditional users of copper have been weighing the advisability of substitute materials. Even enthusiastic supporters of substitution readily agree that no material can ever entirely replace copper. Some large copper users have found that substituting other materials for copper involves either broad product redesigning or substantial changes in manufacturing

(continued on p. 11)

Tri-State Concentrates

Joplin, Jan. 3, 1956

Blende	*Per Ton*
Prime coarse (60% zinc)	80.00
Flotation, 60% zinc	80.00
Galena	
Coarse and flotation, 80% lead	(a)$202.25

(a) Effective Dec. 30, 1955.

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Lead Average (Monterrey)

The net price realized by the American Smelting & Refining Co. on all of its sales of Mexican pig lead, including metal sold for consumption in Mexico, during the week ended Dec. 24, 1955, was 13.40c (U.S.) per lb, f.o.b. refinery Monterrey, Mex.

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Smelters' Aluminum Alloys

Delivered prices of smelters' aluminum ingot per pound, in lots of 10,000 lb. or more.

Piston alloy D132, 32¼@33½c; No. 12 alloy 31½@32c, No. 13 alloy, max. .30 copper, 33@34c.

Deoxidizing grades: No. 1, 32@33c; No. 2, 31@32c; No. 3, 30@31c; No. 4, 29½@30c.

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Smelters' Copper Scrap Prices

Custom smelters' buying prices for scrap, carload lots, refinery:

No. 1 copper and wire, 43c; No. 2 heavy copper, 41½c; light copper 39c; refinery brass, 39c.

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Dealers' Scrap Prices

Dealers' buying prices, f.o.b. New York or equivalent freight points, for wholesale quantities, in cents per lb.

No. 1 copper wire	41½@42
Heavy copper & wire, mixed	37½@38½
Light copper	35½@36
No. 1 composition	32@32½
Composition turnings	31@31½
Light brass	19@19½
Yellow brass turnings, mix	21@21½
Heavy yellow brass, mixed	22@22½
Auto radiators, unsweated	24½@25
Brass pipe, cut	25@25½
Rod brass turnings, No. 1	25½@26
Rod ends, brass	26@26½
New soft brass clips	27½@28
Cast aluminum, mixed	17@17½
Aluminum crankcases	17@17½
Aluminum clips, new soft	20@20½
Sheet aluminum, old clean	17@17½
Aluminum turnings, clean	11½@12
Zinc die cast, mixed	3¼@3½
Zinc die cast, new	5½@5¾
Old zinc	5½@6
New zinc clips	8@8½
Soft or hard lead	12½@13
Battery plates	6½@7
Babbitt mixed	14½
Linotype or stereotype	13½@14
Electrotype	12¾@13
Solder joints close cut	19@19½
Block tin pipe	84@87
Autobearing babbitt	48@50
Monel clips, new	60@65
Monel sheet, clean	60@65
Nickel, rod ends	100@125
Nickel, clippings	100@125

Copper Supplies in 1956

(continued from p. 10)

processes, and the final expense has been as high or higher than the cost of using copper.

Many industries believe the technical qualities of copper cannot be duplicated in substitute materials even if the substitutes are available at a more economical price. In some instances, large outlays must be expended to change over machinery and to train personnel in the techniques of the substitute materials. Further, it is expected that a better balance between supply and demand in copper, which is foreseen in 1956, will help assure users of a continuous supply of copper. It is thought likely that a period of freedom from production interruptions and price fluctuations in copper would do much to reestablish user confidence in copper's availability.

Many quarters have expressed concern about mineral reserves in the United States and throughout the world.

The ability of the copper industry to meet expanding needs from reserves can be summed up in the following quotation by the U. S. Bureau of Mines:

> "Most observers agree that world reserves exceed 100-million short tons of recoverable metal, with the prospect that, when conditions for production in foreign countries improve (i.e., adequate power, transportation and political labor and other problems solved) reserves be double the quantity given. The possibilities for advancement in mining and metallurgical techniques are great, and the quantities of copper that ultimately may be made available probably will differ sharply from any of the many previous estimates."

Future Copper Prospects

The outlook for copper in 1956 is promising. The pattern in metals seems to be: more markets for everyone. Mechanization is increasing and other countries are striving to reach our standard of living. Per capita consumption is rising. And, since copper is closely related to capital goods, the expected high level of business in construction, machinery, automobiles and other durable goods items will stimulate a high level of demand for copper.

Here and abroad the copper industry is engaged in a long term program of expanded production. To maintain substantial supplies of copper, new mines are being opened and existing properties are being expanded. The industry is employing new and more efficient methods of mining and processing to utilize lower and lower grades of ore. At the same time exploration for additional ore deposits is receiving highest priority.

E&MJ Yearly Average Prices — 1951-1955

	1951	1952	1953	1954	1955
Copper, dom., f.o.b. ref'y	24.200	24.200	28.798	29.694	37.491
Copper, foreign, f.o.b. ref'y	26.258	31.746	30.845	29.889	39.115
Lead, common, N. Y.	17.500	16.467	13.489	14.054	15.138
Lead, common, St. Louis	17.300	16.266	13.288	13.854	14.942
Zinc, P. W., St. Louis	18.000	16.215	10.855	10.681	12.299
Tin, Straits, N. Y.	127.077	120.473	95.845	91.838	94.735
Silver, New York	89.368	84.941	85.188	85.250	89.099
Quicksilver (flask 76-lb.)	$210.125	$199.097	$193.032	$264.386	$290.348
Antimony dom., N. Y. (cases) (a)	45.666	45.524	37.402	31.970	33.651
Antimony, dom., bulk, Laredo	42.354	42.094	33.932	28.500	30.181
Platinum, refined	$90.000	$90.000	$91.238	$83.897	$85.978
Cadmium (prod. quot.)	255.000	224.095	199.439	172.500	170.000
Aluminum, 99 + %, ingot	19.000	19.410	20.931	21.784	23.668
Magnesium, ingot (b)	24.500	24.500	26.535	27.000	29.678
Nickel, electrolytic	54.000	56.500	59.888	60.453	64.500

(a) Packed in cases, 5 tons or more but less than carload. (b) F.o.b. Freeport, Texas.

Marion M. Caskie Retires

Reynolds Metals Co. has announced the retirement of Marion M. Caskie, executive vice president since 1948, effective December 31, 1955, under the company's retirement plan. Mr. Caskie first became associated with the late Richard S. Reynolds, founder of Reynolds Metals Co., 41 years ago, and was made assistant vice president in 1930.

Norwegian Aluminum Expansion

OSLO (Reuters): The Industrial Affairs Committee of the Norwegian Parliament has approved plans to increase aluminum production at the state-owned Ardal plant by 36,000 tons to 62,000 tons annually. Costs, including expansion of hydro-electric power facilities, are put at about £19.7-million.

STOCK AND SERVICE CENTERS FOR "INCO" NICKEL

The following are sources of supply for INCO primary nickel and for technical service on the use of INCO primary nickel for alloying purposes.

ATLANTA 3
J. M. Tull Metal & Supply Co.
265 Marietta Street, N. W.
Tel. Algoma 3871

BALTIMORE 5
Whitehead Metal Products Company, Inc.
4300 East Monument Street
Tel. Eastern 7-5200

BUFFALO 7
Whitehead Metal Products Company, Inc.
2128 Elmwood Avenue
Tel. Bedford 3100

CALGARY, ALTA.
Wilkinson Company, Ltd.
630 8th Avenue, West
Tel. 691427

CAMBRIDGE 39, MASS.
Whitehead Metal Products Company, Inc.
181 Alewife Street
Tel. Trowbridge 6-4680

CHICAGO 23
Steel Sales Corporation
2154 South Pulaski Road
Tel. Bishop 7-7700

CINCINNATI 29
Williams and Company, Inc.
1211 Fredonia Avenue
Tel. Capitol 1-3000

CLEVELAND 14
Williams and Company, Inc.
1700 Perkins Avenue
Tel. Utah 1-5000

COLUMBUS 8, OHIO
Williams and Company, Inc.
851 Williams Avenue
Tel. Automotive 4-1523

DALLAS 9
Metal Goods Corporation
6211 Lake Springs Road
Tel. Elmhurst 3271

DENVER 2
Metal Goods Corporation
2425 Walnut Street
Tel. Acoma 2-5891

DETROIT 10
Steel Sales Corporation
5151 Wesson Avenue
Tel. Tyler 6-1000

EDMONTON, ALTA.
Wilkinson Company, Ltd.
9045 103rd Street
Tel. 3-5834

GRAND RAPIDS 2
Steel Sales Corporation
226 Federal Square Building
Tel. Grand Rapids 9-3981

HARRISON, N. J.
Whitehead Metal Products Company, Inc.
1000 South 4th Street
Tel. Humboldt 5-5800

HOUSTON 3
Metal Goods Corporation
711 Milby Street
Tel. Central 6881

INDIANAPOLIS 18
Steel Sales Corporation
2155 N. Sherman Drive
Tel. Cherry 1535

KANSAS CITY 8, MO.
Steel Sales Corporation
2201 Grand Avenue
Tel. Victor 7270

LOS ANGELES 22
Pacific Metals Company, Ltd.
2167 South Garfield Avenue
Corner Washington Blvd.)
Tel. Raymond 3-5411

LOUISVILLE 3
Williams and Company, Inc.
1109 South Preston Street
Tel. Clay 7761

MILWAUKEE 9
Steel Sales Corporation
2450 West Cornell Street
Tel. Hilltop 3-2020

MINNEAPOLIS 13
Steel Sales Corporation
401 Harding Street, N. E.
Tel. Sterling 1-4893

MONTREAL 30, QUE.
Hubert W. Bertram, Limited
10274 West Broadway Avenue
Tel. Hunter 6-2511

NEW HAVEN 12
Whitehead Metal Products Company, Inc.
250 Church Street
Tel. Spruce 7-1345

NEW ORLEANS 12
Metal Goods Corporation
432 Julia Street
Tel. Canal 7373

NEW YORK 14
Whitehead Metal Products Company, Inc.
163 West 10th Street
Tel. Watkins 4-1500

PHILADELPHIA 40
Whitehead Metal Products Company, Inc.
1955 Running Park Avenue
Tel. Baldwin 9-2323

PHOENIX
Pacific Metals Company, Ltd.
909 North First Street
Tel. Alpine 4-0389

PITTSBURGH 22
Williams and Company, Inc.
931 Pennsylvania Avenue
Tel. Cedar 1-8600

PORTLAND 12, ORE.
Eagle Metals Company
1136 North Rendalph Avenue
Tel. Atlantic 8-5201

ST. LOUIS 10
Steel Sales Corporation
4565 McRee Avenue
Tel. Prospect 1-5255

SALT LAKE CITY 4
Pacific Metals Company, Ltd.
161 West 5th South
Tel. Davis 2-5661

SAN DIEGO 1
Pacific Metals Company, Ltd.
1531 Imdia Street
Tel. Belmont 4-3155

SAN FRANCISCO 10
Pacific Metals Company, Ltd.
1100 Nineteenth Street
Tel. Mission 7-1104

SEATTLE 4
Eagle Metals Company
4735 First Avenue South
Tel. Landor 9974

SPOKANE 26
Eagle Metals Company
Haloup at Broadway
Tel. Keystone 0586

SYRACUSE 4
Whitehead Metal Products Company, Inc.
307 W. Taylor Street
Tel. 74-4641

TOLEDO 13
Williams and Company, Inc.
946 Keno Street
Tel. Glendale 0061

TORONTO 2, ONT.
Alloy Metal Sales Limited
181 Front Street East
Tel. Empire 3-9411

TULSA 3
Metal Goods Corporation
303 North Boston Street
Tel. Tulsa 4-6181

VANCOUVER, B. C.
Wilkinson Company, Ltd.
190 West Second Avenue
Tel. Emerald 2121

WINNIPEG, MAN.
Alloy Metal Sales Limited
70 Mountain Street
Tel. 93-1161

INCO
TRADE MARK

THE INTERNATIONAL NICKEL COMPANY, INC.
67 WALL STREET - - - NEW YORK 5, N. Y.

Gold
Lead
Bismuth
Arsenic

Silver
Zinc
Cadmium
Tellurium

Antimonial Lead

UNITED STATES SMELTING
REFINING AND MINING COMPANY

57 WILLIAM STREET SALES OFFICE NEW YORK, N. Y.

Kennecott Copper Corporation
Kennecott Sales Corporation

Producers and Sellers of

Electrolytic Copper
Chino Fire Refined Copper (K. C. M.)
Braden Fire Refined Copper (★★★)
Molybdenite

Offices

161 East 42nd St., New York 17, N. Y.